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Impact of Credit Restrictions on Soviet Trade and the Soviet Economy

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Overview

One of the most difficult problems for the Soviet leadership in the 1980s will be how to deal with a severe scarcity of hard currency at a time when the economy is slowing sharply. Although the slowdown results from the interplay of many forces, and the overall weight of hard currency imports in the economy is small, these imports play an important role in easing food shortages, raising energy production, sustaining technology and productivity, and making up for unexpected shortfalls of key products.

But while the Soviet need for Western goods and technology is rising, during the 1980s the purchasing power of Moscow's hard currency earnings is likely to decline.

- o The volume of oil exports will be steadily squeezed between rising oil consumption and oil production that is now constant and will fall later.
- o Soft oil markets probably will keep real oil prices from rising for several years.
- o Gas exports will increase substantially if the gas export pipeline is built, but not enough to offset the drop in oil exports.
- o Hard currency earnings from arms sales are unlikely to increase much because LDC clients will be less able to pay.
- o Other exports suffer from production problems (wood products, metals), or an inability to compete on a large scale in Western markets (machinery, chemicals).

The Soviet hard currency position is still relatively strong; the debt-service ratio is only about 17 percent. Nonetheless, prospective stagnation in the volume of exports means that any attempt to achieve a substantial increase in imports will quickly push up hard currency debt to an unacceptable level. Indeed, a large inflow of Western capital would be required just to maintain the current level of real imports and would result in a doubling of debt by 1985 and a quadrupling by 1990. The debt-service ratio would approach 30 percent by 1985--a level high enough to cause concern in financial circles--and reach dangerous proportions (45 percent) by 1990.

In this tight situation, a Western credit policy of restricting the volume and hardening the terms of government-guaranteed credits can play an important role in:

- o Avoiding overexposure by private banks, as has already occurred in lending to Eastern Europe, and the potentially costly claims on Western budgets if guarantees have to be made good.
- o Putting added pressure on the Soviet authorities to reexamine their priorities.

To illustrate the potential impact of Western credit restrictions, we have projected the effects of some possible sets of restrictions. A leveling off of new Western lending at the average rate of 1976-80 would result in a decline in import volume of about 10 percent during 1982-90 and keep the the hard currency debt within manageable proportions. Substantial reductions in government-guaranteed lending coupled with a cessation of medium and long term private lending would cut imports by nearly 15 percent.

Even moderate declines in hard currency imports can greatly complicate Soviet economic problems and make allocation decisions more painful. Large agricultural imports are essential to the growth of meat consumption even in normal crop years. Expansion of gas consumption and exports requires massive purchases of Western large diameter pipe. Large imports of metals and chemicals are an integral part of Soviet economic plans. Orders of Western machinery and equipment have already been sharply curtailed; further cuts would certainly impinge on priority programs in steel, transportation, agriculture, and heavy machinebuilding.

It is unlikely that Soviet military and foreign policy programs would go unscathed if sizeable cuts in allocations of foreign exchange had to be imposed. The economy is so taut--indeed, it is already rent with widespread shortages--that the repercussions of any substantial cuts are bound to spread widely, even to military industries with all their traditional immunity. Moreover, such programs as aid to Cuba or third world countries, which directly or indirectly use up foreign currency and are already unpopular within the USSR, would encounter greater opposition.

Introduction

The recent sharp turnaround in Soviet hard currency trade coupled with the difficulties that several East European countries are having in paying their debts is raising serious questions about the Soviet Union's external financial strength.

This paper assesses the extent of the USSR's reliance on Western credits and the consequences for Soviet hard currency debt and import capacity of unrestricted credits as well as reductions in the volume of credits granted to the USSR. The assessment begins with a review of the credits provided or guaranteed by Western governments. It then discusses the impact of credit restrictions on hard currency debt, debt-service ratios, and Soviet import capacity. The USSR, of course, would try to sidestep the effects of restraints on Western credits, so the range and effectiveness of possible Soviet responses are analyzed. The paper concludes with some judgments regarding the impact of credit restrictions on the Soviet Union and on the level and composition of East-West trade.

Official Credits to the USSR -- Background and Current Status

Recent Trends

During the 1970s the USSR and Eastern Europe took advantage of political detente to greatly increase imports from the West. The volume of Soviet hard currency imports more than tripled during the decade, for an annual growth of 13 percent. Hard currency imports increased as a share of total Soviet imports and in relation to GNP. Although still small in the aggregate (less than 2 percent of GNP), hard currency imports are important to many high priority Soviet economic programs, including raising meat consumption and energy production. They comprise perhaps 10 percent of investment in machinery and equipment.*

The expansion of hard currency imports in the 1970s was financed mainly by increased earnings from higher oil and gold prices, gas exports, arms sales for hard currency, and Western credits, particularly through mid-decade. Exports other than oil, gas, and arms have on balance barely held their own. Starting from a very low base, Soviet hard currency debt reached almost $15 billion by the end of 1976, and the net inflow of Western capital after interest payments paid for more than 20 percent of hard currency imports during 1971-76. The net inflow

*Comparisons of imports with domestic values are complicated enormously by the artificiality of the official exchange rates for the ruble. For example, according to Soviet statistics, total imports in 1971-75 amounted to 85.5 billion foreign trade rubles. A researcher in one of the leading Soviet scientific research institutes, however, estimates the total value of imports for this period at 190.8 billion rubles in internal prices. Western researchers have also argued that using the official exchange rate significantly understates the domestic ruble value of Soviet imports.

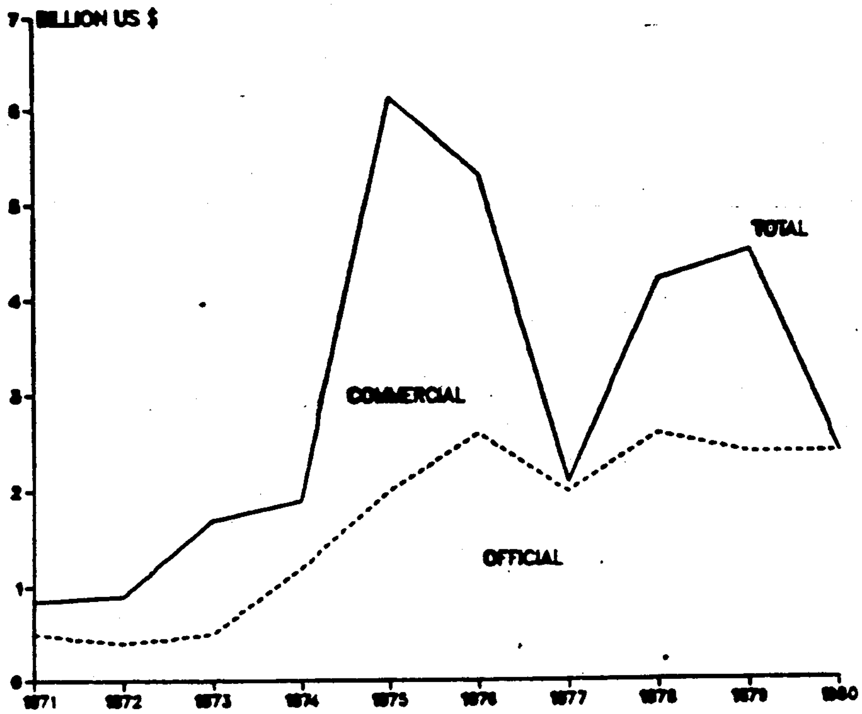
then slowed greatly during 1977-78 and became a small net outflow in 1979-80 (Figure 1).

About 40 percent of the total Soviet hard currency debt of $20.5 billion at end 1981 was guaranteed by Western governments. Drawings on officially supported credits rose rapidly and steadily until 1976, when they leveled off. Use of private credit has fluctuated widely. Medium and long-term private credits have been raised mainly in the Eurodollar market and were used for general balance-of-payments purposes, unlike government guaranteed credits, which are tied to particular exports and projects.

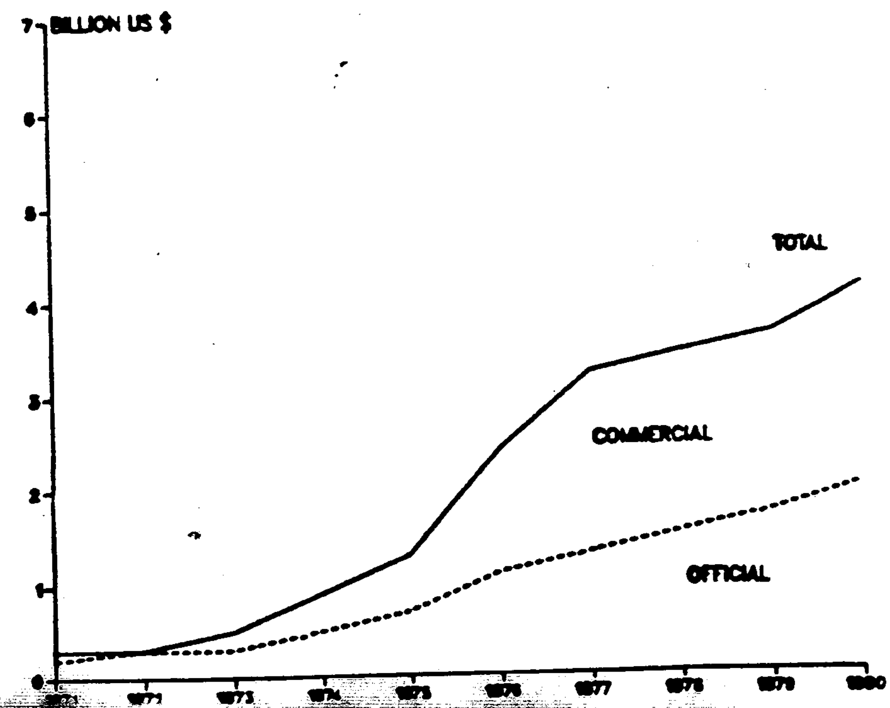
The large jump in Soviet export earnings resulting from higher oil prices in 1979-80 enabled Moscow to pay for increased imports of food and steel, to virtually cease commercial borrowing, and to build up its hard currency assets. In the past year or so, however, softening oil prices, weak markets for other Soviet exports due to the Western recession, bad crops, and unexpected hard currency expenditures in support of Poland turned the Soviet hard currency balance of payments from surplus to deficit. Moscow drew down its hard currency balances, resumed large gold sales, borrowed on short-term from Western banks and suppliers, and took steps to cut imports. But they could not borrow on a large scale in the Eurodollar market as they did in 1975-76 because deteriorating East-West relations and the Polish crisis made Western bankers far more nervous. In 1981, new commitments turned upward as a result of business connected with the new gas export pipeline.

FIGURE 1

GROSS DRAWINGS



REPAYMENTS



Soviet Use of Official Credit

Since the USSR began large purchases of Western technology in the early 1970s, Moscow has used official and officially-backed credits to finance one-third of its imports of plant, equipment, and large-diameter pipe from the West. Annual Soviet drawings on government-backed credits jumped from an average of $475 million in 1971-73 to nearly $2 billion by 1975, but have held at $2.5 billion per year since 1978. The volume of new commitments fell from a peak of nearly $4 billion in 1976 to less than $2 billion by 1980, reflecting falling Soviet orders for Western machinery and equipment.

Although heavy drawings in recent years have reduced the backlog of undrawn commitments, Moscow still had $5 billion in undisbursed credits available at yearend 1981 (excluding commitments for pipeline orders). Perhaps $1 billion of these commitments were pledged, however, to contract proposals that have now been scrapped. The combination of rising debt-service payments and level drawings has steadily reduced the net resource inflow to the USSR on official credits from a maximum of $1.2 billion in 1976; by 1980-81 there was a small net outflow from the USSR as debt service exceeded drawings.

Subsidized interest rates and long-term maturities on most government-backed credits have helped Moscow conserve some scarce hard currency. The interest rate subsidy reached a record level in 1981--on the order of $300-$400 million--as commercial rates in most Western countries averaged 6 percentage points more than those charged on official loans. Last October's increase in the

OECD interest rate guidelines and a possible reclassification of the USSR into the "rich country" category will reduce the subsidy, but only slowly. Several years will be required to pay off the official credit committed on concessionary terms, and many credits extended under earlier agreements can still be drawn at lower rates. The lengthy maturities available on official financing (up to 8½ years) reduced Moscow's 1981 debt service bill by approximately $200 million compared with what it would have been with a maturity limit of five years.

In 1977-80, contracts for sales of large-diameter pipe and chemical plant were the primary beneficiaries of government-backed financing (Table 1). Pipe contracts backed by official financing totalled at least $2.5 billion; approximately $300-$500 million in contracts for other energy-related equipment also received official guarantees or credits. Officially-guaranteed credits covered $3.0 billion in contracts for complete plants; two-thirds of these commitments were for chemical plants with the remainder going for steel mills ($170 million), aluminum plants ($160 million), and factories for machinery and consumer goods ($690 million together). OECD data report some $3 billion in official credit commitments for machine tools and other plant equipment in 1977-80. Small amounts of credits have financed orders for telecommunications equipment, ships, and earth-moving vehicles.

For many Western countries officially-backed credits covered about one-quarter of total exports to the USSR (Table 2). They were far more important, however, in financing sales of machinery and pipe.

Table 1

Official Credit Commitments to the USSR in 1977-80 by Industrial Sector[a]

(Million US $)

	Total	Canada	West Germany	France	Italy[b]	United Kingdom	Japan
All products	8992	208	2673	2849	775	728	1450
Complete plants	2993	--	718	2810	--	423	300
Steel plants	168	--	44	124	--	--	--
Chemical plants	1900	--	432	790	--	363	300
Hydro and thermal power	44	--	37	7	--	--	--
Wood, pulp and paper	33	--	--	--	--	--	--
Aluminum, copper, zinc	162	--	--	289	--	--	--
Other	686	--	205	101	--	60	--
Machinery, and equipment	3077	200	741	981	775	305	--
Ships	32	--	--	--	--	--	--
Telecommunications	87	--	--	87	--	--	--
Road vehicles	2	2	--	--	--	--	--
Oil and gas equipment	305	6	--	299	--	--	--
Pipe	2496	--	1214	132	--	--	1150

Source: OECD Reports for all countries except Japan. Data for Japan based on announcements of credits backing specific contracts.

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[a] Value of contracts supported by official credits with an original maturity of more than 5 years.

[b] Presumably includes credits for pipe exports.

Table 2

USSR: Estimated Drawings on Western Officially-backed Credits in 1975-80

	Drawings -- Million US $								
	1975	1976	1977	1978	1979	1980	Annual Average 1975-80	Credit Drawings As a Percent of Machinery and Pipe Imports* 1975-80	Credit Drawing As a Percent o Total Imports* 1975-80
otal	1997	2450	1991	2565	2411	2533	2324	50	24
West Germany	575	650	575	675	675	700	642	36	20
France	300	350	450	550	650	600	483	65	29
Italy	150	175	200	400	350	350	271	45	25
United Kingdom	100	125	100	200	200	225	158	65	22
Canada	10	5	5	20	20	20	13	50	2
Japan	450	525	500	675	500	500	525	48	23
Other	412	620	161	45	16	138	232	--	--

*Based on Western country trade data which generally show a smaller amount of exports to the USSR than Soviet trade data.

Soviet Demand for Imports

Despite the help from large infusions of hard currency imports in the 1970s, the performance of the Soviet economy is worsening. Although the economy is still expanding, its rate of growth has fallen drastically. The slowdown stems mainly from rising resource costs, systemic inefficiencies, shortfalls in agriculture and in key industries such as steel, and an accumulation of planning mistakes. As a result, growth of labor productivity has slowed markedly at a time when demographic trends have greatly curtailed the supply of new labor.

Economic growth in the 1980s, projected at 2 percent per year or less, will probably be insufficient to both support past rates of increase in defense spending and to maintain a perceptible rise in living standards. Indeed many Soviet citizens believe that living standards have been declining over the past few years. If defense outlays continue to rise by about 4 percent per year (as we now project), they would preempt about two-thirds of annual increments to GNP in 1990, as compared with one-fourth now. Leadership choices will be far more difficult; in particular, allocations to consumer industries, agriculture, and transportation would inevitably suffer.

The resource bind confronting Soviet leaders in turn suggests that hard currency imports will be even more important to the USSR in the 1980s than in the 1970s.

- Moscow needs large imports of Western farm products, especially grain, to increase food supplies even in good crop years, and to keep them from falling in bad years.

- Western pipe and compressors are essential for the rapid expansion of Soviet gas production, which will be the main source of additional energy supplies and hard currency in the 1980s. Western equipment also is increasingly important in oil production.
- Imports of Western production equipment--especially advanced machine tools--would help to raise labor productivity, which is the key to Soviet economic growth in the 1980s.

Soviet requirements, in other words, will match fairly well the pattern of past purchases of Western goods (Table 3).

The USSR, however, realizes that it will not be able to expand hard currency imports in real terms at the breakneck pace of the first half of the 1970s (22 percent per year) or even at the more leisurely pace of the last half of the 1970s (5 percent per year). The cautious formulation of the foreign trade section in the 1981-85 Plan contrasts sharply with the bullish trade prospects expressed in previous five-year plan guidelines. In remarks to the Supreme Soviet in November, State Planning Committee Chairman Baybakov implied that the volume of trade with non-Communist countries would grow by only 2.3 percent per year during 1981-85 compared with just over 5 percent in 1976-80. Allowing for some rise in the Soviet hard currency trade deficit, the Plan might envisage an average annual growth in hard currency imports of 2-1/2 to 3 percent per year. As will be shown below, even this relatively modest goal cannot be achieved without an excessive increase in Western financial exposure to the USSR.

Table 3

USSR: Hard Currency Imports

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
llions of Current US Dollars										
tal	2,943	4,157	6,547	8,448	14,257	15,316	14,645	16,951	21,585	26,017
ain	185	770	1,423	509	2,323	2,627	1,354	2,360	3,279	4,360
her agricultural products	475	423	933	1,273	1,533	1,458	1,836	1,478	2,287	4,400
chinery	960	1,282	1,739	2,334	4,593	5,074	5,114	5,969	6,028	6,039
lled ferrous metals	366	489	884	1,905	2,565	2,251	1,750	2,503	3,413	3,469
emicals	213	257	279	720	742	630	670	831	1,203	1,565
her	744	936	1,289	1,707	2,501	3,276	3,921	3,810	5,375	6,184
illions of Constant US Dollars (1970)										
otal	2,705	3,547	4,242	5,118	7,268	8,254	7,470	7,292	8,430	9,166
rain	185	733	730	196	997	1,257	670	937	1,100	1,188
ther agricultural products	484	298	339	615	751	715	649	471	757	1,419
achinery	946	1,149	1,353	1,622	2,700	2,929	2,827	2,716	2,512	2,350
olled ferrous metals	215	321	583	1,074	1,030	1,147	909	1,113	1,423	1,330
hemicals	211	253	261	510	460	376	307	347	435	580
ther	664	793	976	1,101	1,330	1,830	2,108	1,708	2,203	2,299

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Prospects for Hard Currency Earnings

In the past, the USSR has been able to offset sizeable trade deficits with large sales of gold and arms (Table 4). But the outlook for Soviet hard currency exports is so poor that Moscow will not be able to stave off large and growing requirements for hard currency by using the gold/arms option. In the 1970s, the USSR relied primarily on sales of petroleum, natural gas, timber, and wood products, chemicals, metals, and diamonds. Machinery exports were not an important factor (Table 5). In the 1980s, however, the volume of energy exports is likely to decline substantially while the other exports, on balance, hold their own. Gold and arms sales cannot save the situation.

Merchandise Exports

We think that Soviet oil production will begin to decline by mid-decade and that domestic consumption will continue to rise slowly.* Unless Moscow elects to reduce exports to Eastern Europe beyond the cuts introduced in 1981, the stage is set for a continued fall in exports of oil and oil products for hard currency. (They dropped in volume by 25 percent between 1978 and 1981.) Because of the uncertainties concerning the future of production, consumption, and prices for oil and the relative priorities of the various domestic and export uses of oil, projections of oil exports cannot be made with any precision. In our view, however, the trend is clear--only the extent of the

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* Oil production has been relatively stagnant since November 1980.

Table 4
USSR: Hard Currency Payments Position

(Million US $)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981[a]
ade balance	-500	-313	-1,356	-1,757	-978	-6,419	-5,595	-3,300	-3,794	-2,036	-2,519	-4,000
Exports, f.o.b.	2,201	2,630	2,801	4,790	7,470	7,838	9,721	11,345	13,157	19,549	23,498	23,800
Imports, f.o.b.	2,701	2,943	4,157	6,547	8,448	14,257	15,316	14,645	16,951	21,585	26,017	27,800
ld sales	Negl.	24	289	962	683	725	1,369	1,618	2,522	1,490	1,780	2,700
t interest	-83	-48	-60	-80	-102	-568	-716	-846	-881	-799	-710	-1,500
ms receipts	35	50	Negl.	250	250	1,200	1,500	1,500	1,700	5,500	3,300	5,000
ther invisibles and transfers	570	259	207	583	712	351	511	1,800	1,823	-360	1,600	1,000
Current account balance	22	-28	-920	-42	565	-4,711	-2,931	772	1,370	3,795	3,451	3,200
irect investment abroad	0	-6	0	-9	-11	-3	-31	0	0	0	0	0
ross drawings	NA	860	878	1,678	1,910	6,132	5,332	2,096	4,165	4,511	3,033	5,700
Government backed	NA	510	426	495	1,164	1,972	2,611	1,991	2,565	2,411	2,433	2,400
Commercial	NA	350	452	1,183	746	4,160	2,721	105	1,600	2,100	600	3,300
epayments	NA	298	384	510	891	1,287	2,445	3,238	3,443	3,625	4,061	3,300
Government backed	NA	223	276	338	483	730	1,056	1,305	1,476	1,722	1,966	2,000
Commercial	NA	75	80	172	408	557	1,389	1,933	1,967	1,903	2,095	1,300
ending to other countries[b]	-25	-55	-679	-809	-1,029	295	-1,711	140	-1,582	-2,926	200	1,600
Capital account balance	NA	507	185	359	10	5,140	1,176	-1,002	-860	-2,040	-828	4,000
Statistical discrepancy[c]	NA	-479	735	-317	-575	-429	1,755	-798	-510	-1,755	-2,623	-7,200

Estimated.
Net change in Soviet assets held with Western commercial banks (a positive sign signifies an asset drawdown).
Includes intra-CEMA hard currency trade and other transactions.

Table 5

USSR: Hard Currency Exports

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Million Current US Dollars										
Total	2,630	2,801	4,790	7,470	7,838	9,721	11,345	13,157	19,549	23,498
Petroleum	567	556	1,248	2,548	3,276	4,514	5,275	5,462	9,558	12,028
Natural gas	20	23	23	86	220	347	566	1,063	1,404	2,706
Coal and coke	125	121	135	252	391	370	359	293	313	362
Machinery and equipment	184	225	299	341	560	657	789	1,188	1,419	1,388
Ferrous metals	131	134	204	222	167	171	186	145	225	246
Wood and wood products	360	403	714	1,009	712	852	1,045	967	1,357	1,476
Chemicals	73	75	118	261	256	215	229	300	555	765
Agricultural products	346	347	414	685	572	627	730	545	570	478
Diamonds	257	371	515	545	478	511	606	773	1,043	1,304
Other	567	546	1,120	1,521	1,206	1,457	1,560	2,421	3,105	2,745
Million Constant US Dollars (1970)										
Total	2,430	2,423	2,801	2,885	2,848	3,174	3,308	3,962	4,044	3,686
Petroleum	441	406	437	375	476	588	813	747	611	592
Natural gas	13	26	26	65	91	156	182	221	273	273
Coal and Coke	80	78	83	92	86	89	88	70	65	58
Machinery and equipment	153	169	195	199	277	319	314	514	566	507
Ferrous metals	156	184	222	232	182	174	123	142	141	134
Wood and wood products	361	402	445	387	361	449	427	405	380	328
Chemicals	77	97	114	188	159	129	143	196	324	403
Agricultural products	336	219	173	252	264	227	256	175	138	112
Diamonds	252	346	359	315	282	284	291	376	380	376
Other	561	496	747	780	670	759	671	1,116	1,166	903

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decline is uncertain. Soviet oil exports could disappear entirely by the end of the 1980s, although it is highly unlikely that the Soviets could afford any sizeable oil imports. Alternatively, Moscow could chose to maintain small hard currency oil exports at the expense of its own consumers and/or those of Eastern Europe.

Gas exports, in contrast, will rise--although not by enough to offset the expected fall in oil exports. Potential gas exports can be projected on the basis of the capacity of the export pipeline and the contracts signed with West European countries. Whether the pipeline is used to full capacity is uncertain since it depends on the growth of West European gas demand.

The volume of timber and wood products exports--some 6 percent of total hard currency exports--has trended downward in the 1970s, and we expect little or no growth in the 1980s. Shortages of labor and equipment will limit timber harvesting operations, which must come increasingly from remote areas. In addition, rising domestic demand for lumber and paper products has caused persistent shortages in the past several years.

Chemical exports grew dramatically in the 1970s but still account for less than $800 million in foreign exchange receipts. Most of the growth in exports resulted from buy back deals under which Western firms provided the plant and equipment in return for future product exports. In fact, Western help has allowed the USSR to become the world's leading ammonia exporter--about 2 million tons in 1980. Exports of other chemicals are not as large nor are they likely to grow substantially in the 1980s. Western exporters already have begun to voice concern about the dumping of Soviet polyethylene and polyvinyl chloride in their markets.

During the 1980s Soviet exports of platinum group metals (mainly palladium), nickel, copper, and aluminum probably will increase, while exports of chromite, manganese, lead, and zinc will at best remain steady but more than likely fall. The USSR produced about half of the world's platinum group metals during the 1970s and is assured of large increases in production of platinum group metals in the 1980s as byproducts of expanded copper and nickel production in Northern Siberia. Even a major surge in Western demand that doubled the price of these products, however, would yield the Soviets an increase in foreign exchange earnings of less than $2 billion.

Moscow probably has some chance of increased earnings from sales of diamonds. In 1980, receipts from sales of diamonds totaled $1.3 billion, equal to 6 percent of commodity exports. Because Western demand is highly volatile, however, earnings fluctuate a great deal.

Machinery exports increased nearly sevenfold during the 1970s and now account for 6 percent of total Soviet hard currency exports. The largest customer for these exports has been Iraq, with whom relations are now tenuous at best. Most Soviet machinery is not well suited to Western markets nor is it backstopped by a developed network for service or spare parts. The Soviets can mass produce, at low cost, simple machinery and equipment like standard machine tools and have had limited success in exporting such products to the West. The market for these products, however, is generally stagnant while competition from newly industrialized countries is growing. Moreover, given the growing stringencies in steel and other raw material supplies, Soviet machine builders will have all they can do to meet the demands of the domestic economy.

Gold

The USSR ranks second to South Africa as a producer and marketer of gold. During the 1970s the Soviet Union accounted for about one-third of annual world gold production and about one-quarter of the newly mined gold moving in world trade. In 1980, gold production was 320 tons, roughly one-half that produced by South Africa, but more than the combined output of all other world producers. Gold traditionally has ranked as one of the USSR's top export earners, with cumulative receipts in the 1970s netting Moscow $15 billion--an amount equal to about 10 percent of Soviet hard currency requirements in the decade. In 1980, the USSR had a gold inventory of 1,800 tons.

In assessing gold as a source of hard currency in the 1980s, Moscow will have to balance its potential for large sales against the market's ability to absorb Soviet offerings. Initially, the USSR could market 300 tons or more of gold a year if all production net of domestic requirements were offered for sale. This volume could rise by 50 to 75 tons by the end of the decade if domestic production continues to increase steadily.

Arms Receipts

Military sales have become an important export earner for the USSR. In the past three years, the net cash inflow from arms deliveries has averaged $4.6 billion, 15 percent of foreign exchange receipts. It is unlikely that the volume of arms sales for hard currency will continue to increase. Indeed, they could fall. The USSR's military order book bulged in 1980 but fell last year. The dramatic decline in surplus oil revenues of Middle East producers such as Libya will make it more difficult for the USSR to demand cash for new deliveries.

Impact of Credit Restrictions

The Reference Case

An assessment of the effect of credit restrictions requires a basis for comparison--a projection of what would happen to hard currency imports, debt, and debt-service ratios in the absence of formal credit restrictions. We call this estimate the Reference Case. In developing the Reference Case and later assessing the potential effects of credit restrictions on Soviet import capacity, we have used a detailed accounting model of Soviet debt accumulation and balance of payments. The model can be used to estimate Soviet ability to finance hard currency imports, as well as associated debt accumulation and debt-service ratios under a range of import and credit assumptions.*

We believe that our projections of earnings capacity and imports are conservative in the sense that they do not overstate the Soviet need for Western credits.

Assumptions

The key determinants of future Soviet hard currency earnings are based on the preceding discussion. They can be summarized as follows.

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* The model keeps track of four types of financing: (1) export gas pipeline credits, (2) other government-backed credits, (3) other commercial medium-and long-term credits, and (4) short-term credits. The model also takes account of the different maturity and interest rates applicable to each category of financing.

Key Assumptions About Soviet Hard Currency Exports in the 1980s

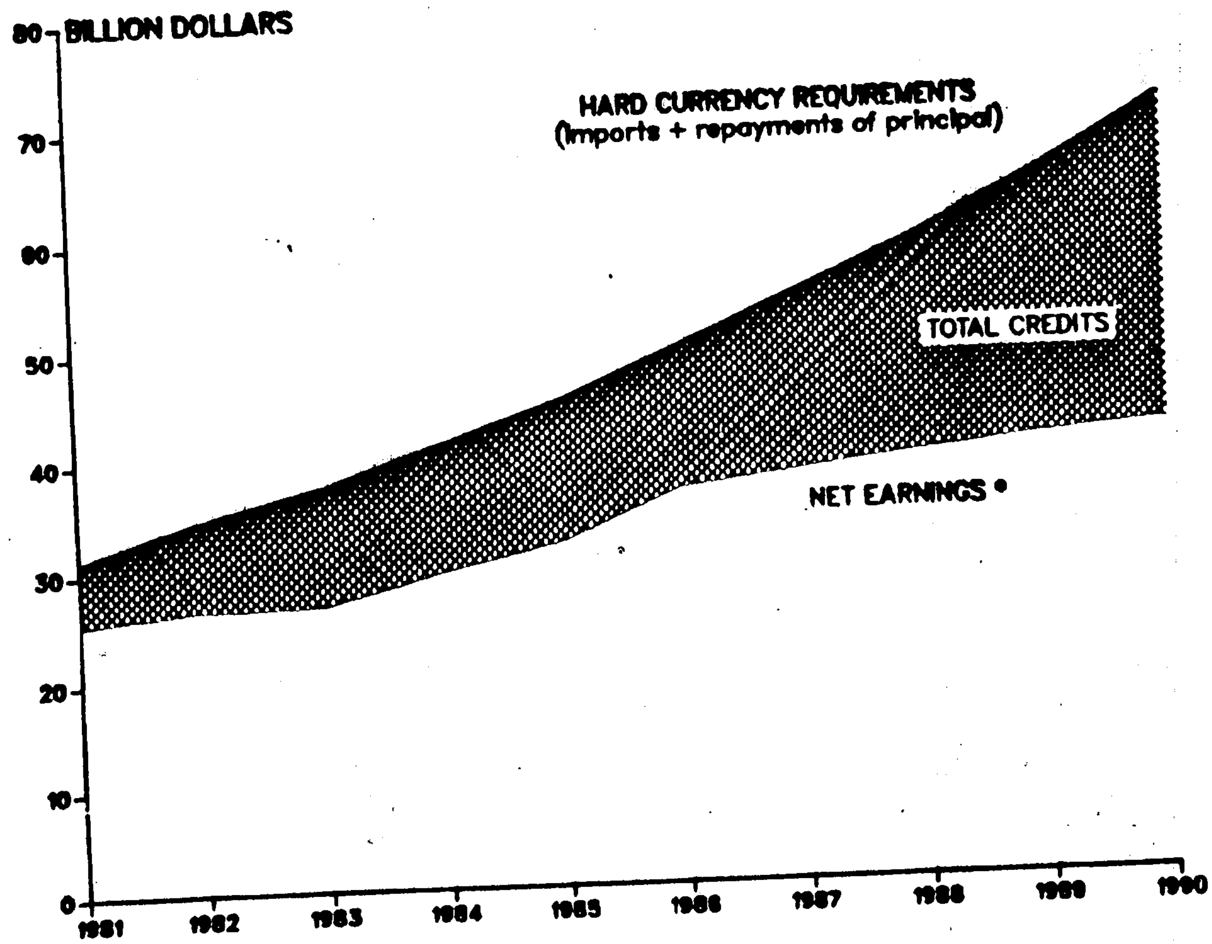
	1981	1985	1990
Energy exports			
Oil (billion 1981 $)	12.0	6.8	3.0
Volume (mbd)	0.9	0.6	0.3
Price (1981 $/barrel)	36.5	30	30
Gas (billion 1981 $)	3.1	6.5	9.0
Volume (bcm)	24.8	39.6	54.6
Price (1981 $/tcm)	127	165	165
Non-energy commodities			
Sales (billion 1981 $)	8.7	8.7	8.7
Gold (billion 1981 $)	2.7	3.2	3.2
Volume (mt)	200	300	300
Price (1981 $/oz)	420	330	330
Arms			
Sales (billion 1981 $)	5	5	5
Total export earnings (billion 1981 $)	31.6	30.3	28.9

In addition, we assume that nominal prices for all Soviet exports (and for all imports) rise by 5 percent in 1982, by 6 percent in 1983, and at a rate of 7 percent during 1984-90.

To calculate the requirements for Western credits, we have assumed in the reference case that the Soviets would attempt to at least hold import volume constant at the 1981 level through the decade. This keeps Soviet financing requirements within reasonable bounds; even so, the gap between imports plus debt service and net earnings (which would have to be financed with new credits) is still very large (Figure 2). Debt would rise to $43 billion in 1985 and to $78 billion in 1990. The debt-service ratio would increase to 28 percent in 1985 and 45 percent in 1990 (Figure 3). Whether the international financial community would

Figure 2

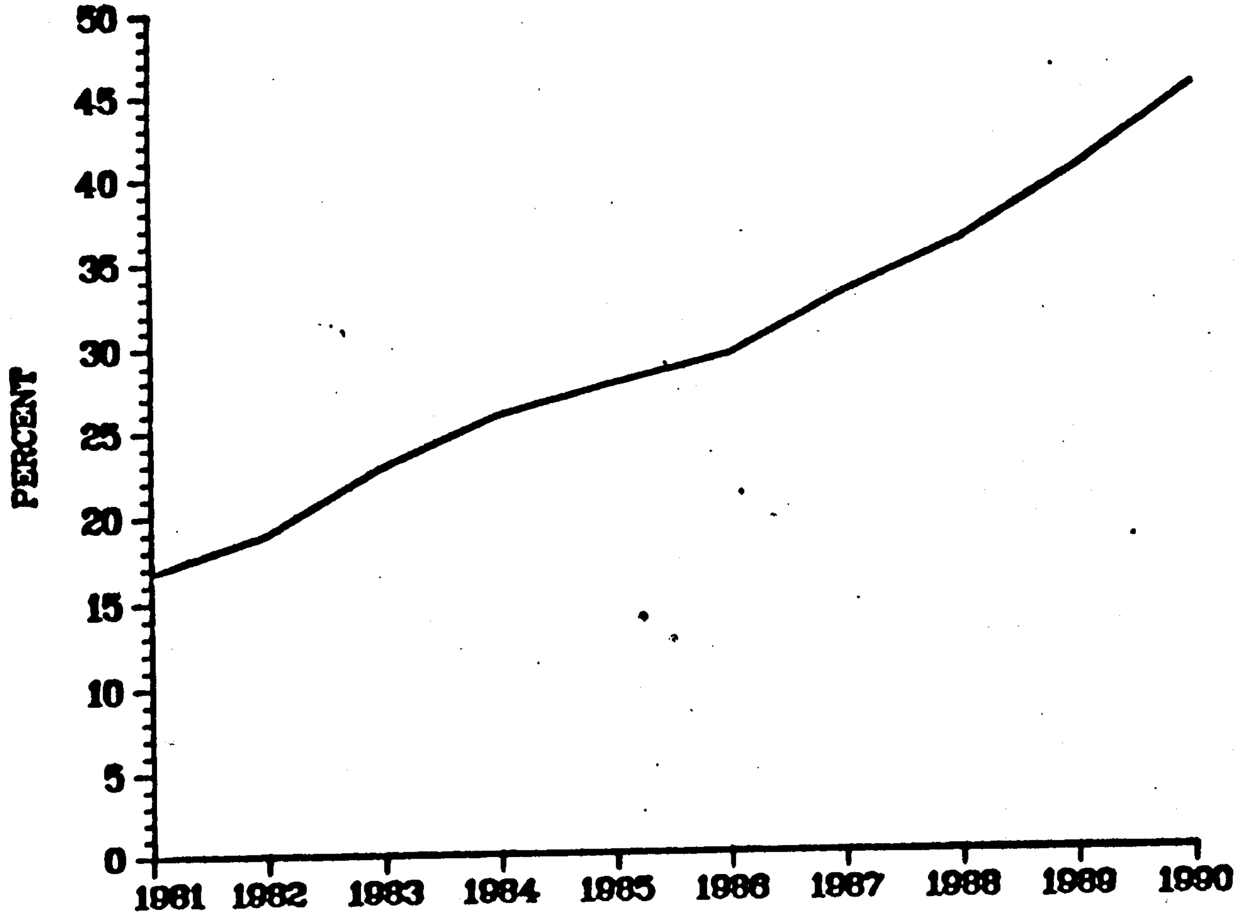
PROJECTED SOVIET HARD CURRENCY GAP



* Projected as the sum of earnings from merchandise exports, arms, and gold less the estimated flow of net invisibles and the statistical discrepancy.

FIGURE 3

PROJECTED SOVIET DEBT SERVICE RATIO: REFERENCE CASE



support debt accumulation of this magnitude is uncertain.

As suggested earlier, a strong case can be made that the Soviets need substantial growth in the volume of imports from the West over the decade to achieve medium and long term economic objectives. But with our earnings projection, growth of real imports at even 2 percent per year--far less than in the recent past--would lead to clearly unreasonable financing requirements. Soviet hard currency debt would have to increase from about 21 billion dollars currently to 50 billion dollars in 1985 and to 130 billion dollars in 1990. The debt-service ratio would rise concurrently, from about 17 percent now to 31 percent in 1985, and to 71 percent in 1990. Neither Soviet financial watchdogs nor Western bankers would be likely to allow debt to accumulate so rapidly.

Credit Restrictions

The Reference Case implies a large net inflow of capital just to maintain a constant volume of hard currency imports. Western restrictions on lending would compel the USSR to reduce its imports in real terms; restrictions would also hold down the growth of debt and the debt service ratio compared with the Reference Case (Table 6).

Table 6

USSR: Impact of Credit Restrictions

	1981	1985	1990
Imports--Billion Dollars, Current Prices			
Reference case	29	38	53
Flat lending	29	34	44
Severe credit restrictions	29	33	44
Imports--Billion Dollars, 1981 Prices			
Reference case	29	29	29
Flat lending	29	26	26
Severe credit restrictions	29	24	25
Gross Hard Currency Debt-- Billion Current Dollars			
Reference case	21	43	78
Flat lending	21	29	23
Severe credit restrictions	21	22	13
Debt-Service Ratio--Percent[1]			
Reference case	17	28	45
Flat lending	17	20	15
Severe credit restrictions	17	15	7

1 Repayments of principal and interest on all debt as a percent of earnings from merchandise exports and sales of arms and gold.

Although many kinds of credit restrictions are possible, the implications of two particular options are outlined here.* In one case we look at the effect of Severe Credit Restrictions in which, beginning in 1983, (a) disbursements under government-guaranteed credits to the USSR fall at the rate of 10 percent per year and (b) commercial lenders, interpreting this cutback as a warning about Soviet credit worthiness, cease all new

* In all cases, we assume that credit restrictions do not apply to lending related to the new gas export pipeline. The projections of debt, debt-service ratios, and import capacity do reflect the pipeline credits and purchases.

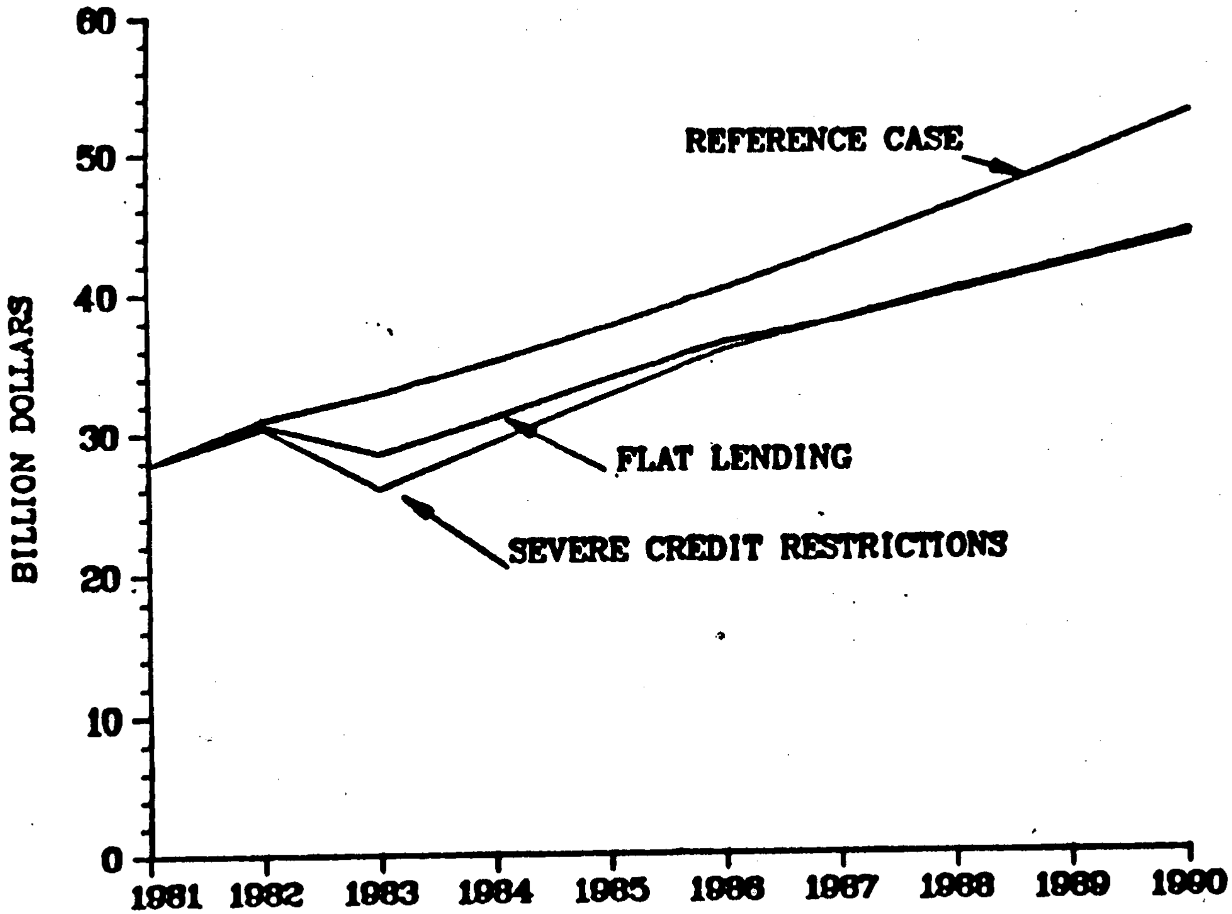
disbursements after 1982. The second case examined--the Flat Lending case--is less restrictive. It assumes that disbursements under government-backed credits are held constant at the average level of 1976-81 (about $2.4 billion) and that disbursements from medium and long-term commercial lending are $2 billion a year, the average level of 1976-81 but far above recent levels. This keeps the ratio of commercial credits to official credits at the high end of the recent range. The two cases should bound a wide range of possible restrictive policies.

Effect on Imports. Both cases representing the formal imposition of restrictions on official credits to the USSR limit Soviet imports considerably (Figure 4). Imports drop in 1983 and then stay below the reference case level through 1990.

Before 1985, Severe Credit Restrictions limit Soviet imports significantly more than the Flat Lending case does, but the difference disappears in later years. After 1986 the additional debt-service requirements associated with the greater borrowing permitted in the Flat Lending case offset the larger flow of new credits that Flat Lending represents to the USSR. In constant 1981 dollars, imports affordable in the Severe Credit Restrictions case are 13 percent less than in the Reference Case in 1982-85 and 9 percent less in the Flat Lending case. After 1985, import capacity is 14 percent lower in both cases.

FIGURE 4

IMPORTS: IMPACT OF FLAT LENDING AND SEVERE CREDIT RESTRICTIONS

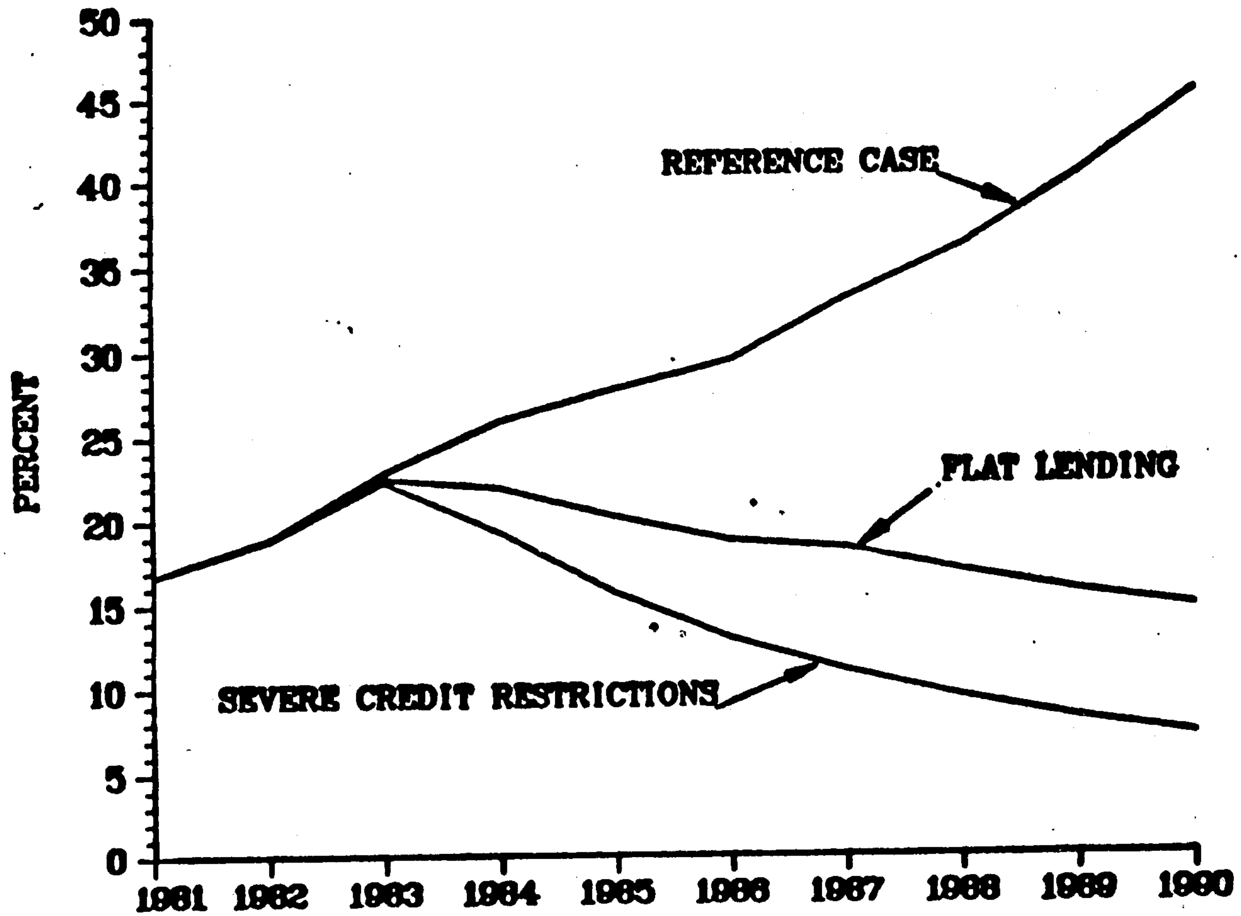


<u>Effect on Hard Currency Debt</u>. Compared with the reference case, credit restrictions would avoid an undue accumulation of Soviet debt. Even so, in the flat lending case the projected borrowing for the gas export pipeline increases debt by nearly 40 percent by 1985, although debt declines subsequently. In the severe restrictions case, debt declines throughout the period.

As a result of recent lending and credit disbursements for the gas export pipeline in 1982-85, scheduled principal repayments overtake assumed credit drawings within a few years in both credit restriction cases. Thus, after 1985, debt declines, and the Soviet financial position, as measured by the debt-service ratio, is much sounder than in the Reference Case (Figure 5).

FIGURE 5

DEBT SERVICE RATIO: IMPACT OF FLAT LENDING



Soviet Response to Credit Restrictions

To soften the impact of credit restrictions on Soviet ability to import hard currency goods and services, Moscow could consider a variety of responses. It could seek credits in countries not participating in credit restrictions or attempt to obtain some relief from the assistance it has been giving to Eastern Europe and other client states. It might try to reduce the drain on its hard currency balances by stepping up its search for compensation deals and barter arrangements. If these options proved to be unrealistic or insufficient to offset the impact of Western credit denial, the USSR would have to divert commodities from domestic use to export or cut back imports paid for in hard currency. These alternatives are considered in order.

Finding Alternative Credit Sources

Moscow would surely try to borrow from other sources if it confronted credit restrictions in major Western countries. The most likely sources of new funds would be in Austria, Sweden, and Switzerland. Already this year, Austria and Sweden have granted general trade credits to finance exports to the Soviet Union. While these countries all sell machinery that the USSR wants, they do not have the capacity to fill the broad range of Soviet requirements. In addition, the Austrian, Swiss, and Swedish banking communities generally follow policies similar to those of the major banks through Europe. If most large European banks adopted policies to limit or reduce their exposure to the USSR, the Austrian, Swiss, and Swedish banks would be unlikely to increase their exposure unless new loans were tied to exports to the USSR.

Borrowing from OPEC countries could also help supplant Western credits. Although most East European countries have raised funds in the Middle East, the USSR has not in the past obtained any substantial loans from OPEC financial institutions. In the last few months Moscow has shown considerable interest in gaining access to OPEC petro-dollar reserves, however. Delegations from Soviet-owned banks in the West have visited several Middle Eastern countries in an effort to persuade them to increase their deposits in Soviet banks. But the financial resources of many OPEC countries, particularly those most friendly to the USSR (i.e., Libya) will probably be strained for some time, limiting Moscow's chances for obtaining hard currency loans.

Funds might also be sought in Latin America, notably in Argentina and Brazil. Both countries sell a large volume of agricultural commodities to the USSR. But Brazil allowed Poland to accumulate a $1.5 billion debt to finance Brazilian exports and as a result of this experience would be extremely careful about extending large credits to another Communist country. In late March, Soviet officials began negotiations with Argentine officials for a $300-million credit for grain purchases. Argentina, however, is not in a position to offer the USSR any significant credits.

Eastern Europe will not be able to borrow to make up for the cuts in credits to the USSR resulting from Western restrictions. Poland's bankruptcy and the beginning of rescheduling negotiations on Romania's debt have by themselves greatly reduced CEMA's access to credits. Even Hungary--with a good record of sound financial management--is now in a serious hard currency bind. The chilly borrowing climate also has recently extended from banks and the Eurocurrency markets to the export credit agencies of Western governments. Moreover, if the West restricts credits to the USSR, the ability of the rest of CEMA to borrow would be further weakened. Eastern Europe might be able to escape some of this negative spillover only if Western governments were able to make clear that their policies will differentiate between Eastern Europe and the USSR.

Even if the East European countries enjoyed more favorable credit ratings, it would be difficult for them to borrow on behalf of the Soviets. Bankers and private creditors would be aware of any borrowing in excess of Eastern Europe's own requirements. Moreover, since official credits are tied to purchases of specific equipment, plants, and projects needed by the USSR, it would be immediately obvious if Eastern Europe attempted to obtain credits to purchase similar items.

<u>Economic Assistance from Eastern Europe</u>

Facing critical economic and financial problems of its own, Eastern Europe will be neither able nor willing to provide much assistance to Moscow. In fact, the flow of assistance traditionally has been in the opposite direction as Moscow has extended large amounts of aid to enhance its political leverage within CEMA. Soviet insistence that Eastern Europe assist in softening the effects of Western credit restrictions could threaten serious disruption in the Soviet camp. Moscow might well decide that the resulting damage to its political interests would be greater than the marginal help that might be squeezed out of its CEMA allies.

Compensation Trade

The USSR's ability to use compensation agreements to avoid the consequences of Western credit restrictions is quite limited. No major deals are now under negotiation, and the depressed economic conditions in the West will make it difficult for the Soviet Union to conclude large new initiatives for some time.

The enthusiasm of Western firms for most of the compensation deals proposed by Moscow has cooled considerably since the mid-1970s. Western firms compare the potential projects in the USSR with projects elsewhere where conditions regarding equity participation and managerial participation are far more favorable. The Soviets often table harsh financial demands, including (1) long-term credits to pay for equipment required to develop related infrastructure as well as the production facilities, (2) medium-line credits to cover consumer goods purchases needed to defray local costs, and (3) deferred payments on the credits during the full period of project development. Western companies also see a number of pitfalls in agreeing to accept deliveries of Soviet products over a long period. Commitments to buy specific quantities of raw materials and semimanufactures are attractive when world supplies are tight and prices are rising, but they lose their charm when demand is slack and the Western partner in a compensation agreement finds it hard to market the products or to use them in its own plants.

Some Western companies are also reluctant to conclude compensation agreements because they do not want to sponsor additional competition on their markets. For example, the USSR purchased many chemical plants during the 1970s. Under the terms of some of the contracts for these plants, large Soviet chemical deliveries to depressed markets in Western Europe have begun and will continue over the next several years. These exports have aroused a great deal of opposition and have made Western companies wary of entering into contracts involving products that do not have a solid market.

Barter Arrangements

Although in the past the USSR has bartered Soviet arms for Zambian cobalt, trolleys for Greek citrus fruits, and fertilizers for Thai corn, these arrangements do not have much potential for easing the Soviet hard currency position. Barter deals presently account for only a very small portion of Soviet trade, mainly with less developed countries. Since most of what the USSR wants from LDCs can be sold by these countries in world markets, they have little reason to make barter deals with the Soviet Union.

Domestic Diversions

Lacking other alternatives, the Soviet leadership could decide to divert domestic production to the export sector. With respect to oil, at least, this option already may be under active consideration, although it depends in large part on meeting plans for substituting gas for oil in the domestic economy. Diverting a significant volume of domestic production, however, would carry a heavy cost simply because the goods most marketable in the West are also in high demand in the USSR.

Import Cuts

Moscow thus would have little choice but to reduce imports. How the Soviets might choose to allocate such cuts cannot be predicted with confidence. It will depend on the degree of credit restrictions and developments within the economy. According to our calculations, Soviet planners face import reductions of $3 to $4 billion a year in real terms if credit restrictions limit access to Western goods. By the end of the decade, import shortfalls would be closer to $5 billion annually.

In their deliberations, planners will have to balance the needs of consumer-oriented programs against the desire to continue industrial modernization and the urgent requirements for raw materials and industrial products to deal with domestic shortfalls that have led to severe bottlenecks in the economy. Food exports should decline in the next few years assuming Moscow gets a break in the weather, but are then likely to rise unless consumer programs are curtailed substantially.

Moscow might also be able to reduce some imports of raw and industrial materials after the middle of the decade if two large steel complexes now under construction at Novolipetsk and Kursk begin operation. The Soviets would then be able to reduce but not eliminate purchases of many types of Western rolled steel.

The USSR also is building a plant to manufacture one million tons of large diameter pipe annually. If production reaches this level, Soviet imports of large diameter pipe could be halved at a saving of roughly $500 million. On the other hand, large purchases of raw materials and basic industrial products have been a fixture in the Soviet import list since the mid-1970s. Moscow has used foreign trade to alleviate domestic shortages, and with the poor performance of Soviet basic industries continuing--if not worsening--shortages of industrial materials can be expected in the future.

Moscow will have little room for maneuver in preserving imports of farm products and industrial materials at the expense of equipment and machinery purchases. As noted, the USSR already had curtailed its equipment and machinery imports in the latter part of the 1970s, and these imports are likely to be fairly low in the next few years except for energy equipment. By the mid-1980s, however, the Politburo is likely to realize that the planned productivity gains are not materializing and decide that larger imports of Western machinery are badly needed. Moscow would then find the necessity to make further cuts especially painful.

Net Impact of Credit Restrictions

A reduction in the availability of Western credits will make even more difficult the decisions Moscow must make among key priorities in the 1980s--sustaining growth in military programs, feeding the population, modernizing the civilian economy, supporting its in East European clients, and expanding (or maintaining) its overseas involvements. Because economic growth will be slow through the 1980s, annual additions to national output will be too small to simultaneously meet the incremental demands that planners are placing on the domestic economy. Even now, stagnation in the production of key industrial materials is retarding growth in machinery output--the source of military hardware, investment goods, and consumer durables. Under these conditions, restrictions on government-guaranteed credits, coupled with the likely negative reactions of private lenders, would increase the likelihood of shortfalls in both civilian and military programs. This will intensify the pressures on Soviet leaders--that even now are building--to alter policies of long standing.

In casting about for alternatives, the Politburo might well look long and hard at foreign aid expenditures or the cost of involvements in Third World countries. Support for revolution is relatively cheap, although Moscow might give greater weight to cost considerations in the future. More important, the USSR might become more reluctant to undertake major commitments to new or existing client states because of the heavy outlays these commitments entail. It might even consider reducing its present level of involvement in countries such as Cuba and Vietnam. Already, Cuba may be under pressure to reduce oil imports while economic aid to Vietnam--including subsidized food and oil deliveries--is apparently not increasing, despite urgent pleas from Hanoi.

As the Soviet hard currency problem developed during 1981, Moscow began to delay payments for imports and reduced purchases of certain non-critical items, including civilian machinery and chemicals. Now there are indications that Soviet authorities are moving to curb imports in a broad brush fashion reminiscent of their actions during the hard currency crunch of the mid-1970s. Specifically, major Western exporters of industrial goods to the USSR have been notified that Soviet purchases are being scaled back or delayed. For some Soviet foreign trade organizations, this means deep cuts--on the order of 25-30 percent. The very top priority programs no doubt would be spared, but many relatively high priority ones, including some military programs, could be hurt at least indirectly.

Cuts in machinery imports, for example, would retard progress in modernizing a number of industrial sectors--steel, machine building, oil refining, robotics, microelectronics, transportation, and construction equipment--at a time when Moscow is counting on a strategy of limited investment growth and relying instead on productivity growth. Unlike in the late 1970s, however, when a backlog of undigested Western equipment enabled the USSR to live off old machinery orders, very few new projects involving Western equipment are now underway, and the need to modernize existing facilities is great. Because growth in domestic investment is being held back by shortages of steel and deficiencies in machinery production, Moscow's only alternative to Western equipment as a vehicle for modernization would be a shift away from the high priority accorded defense industries.

In the long term, sustained credit restrictions would force Moscow to reappraise its priorities. No one can predict how various Soviet programs would be affected. It is reasonable to assume that those requiring the largest hard currency expenditures would be the most vulnerable to cuts. There would be growing pressure from various institutional interests to spread the burden of hard currency shortages widely. Moreover, the tautness of the economy and the critical role Western imports play in many areas virtually assure that sizeable import cuts in almost any industry would have adverse repercussions in other areas.

- Imports of Western machinery are equal to about 10 percent of Soviet capital investment in equipment. The reduction in purchases of industrial goods cited above could cut total capital investment by a noticeable amount.
- Imports of oil and gas equipment, for example, could make a difference of 2 or 3 million barrels per day of oil equivalent production in the middle and late 1980s. The larger part of this would be gas.

- Half of Soviet electronic production facilities--a sector of high importance to the Soviet military effort--is of Western origin. Continued access to Western technology will be important for further expansion.

Hard currency shortfalls could also impinge on defense production through their effect on civilian ministries that support production of military hardware. For example, a cutback in purchases of numerically controlled machine tools could hamper defense-related industrial processes such as the manufacture of gears and disks for high performance turbojet engines. An inability to purchase high-quality steel products could lead to a change in production plans at facilities that manufacture military items such as submarine hulls.

The trade-offs among these major domestic programs will not be easily resolved, particularly if the issues become politicized during succession maneuvering. Soviet leaders will become increasingly tempted to bridge the gap in domestic resources by borrowing abroad. By mid-decade a stringent credit environment could force Moscow to choose between programs that promote the health and well-being of the domestic economy and the economies of its allies and those that foster continued international tension and military competition with the West.

Failure to modify domestic resource allocation at a time when credit restrictions prevent a large net inflow of resources from abroad would set back Soviet economic progress and, in turn, jeopardize the USSR's ability to sustain growth in military and industrial power vis-a-vis the West in the 1990s. On the other hand, the potential of Western credits as part of a program to deal with growing economic difficulties might suggest to a new set of Soviet leaders that a less aggressive international posture would work to their advantage.